What I Claim Is:

1.   A method for facilitating wavelength-specific and packet-switched routing comprising the steps of:

demultiplexing wavelengths propagating on a primary metropolitan fiber ring;

reading a packet header of a packet contained within one of said wavelengths, said packet header having a destination address;

accessing a look-up table;

determining if said destination address matches a local address contained in said look-up table; and

switching said packet based on a result of said determining step.

2.   The method according to claim 1, further comprising the steps of:

directing, by a switch controller circuit, said wavelengths to a remultiplexer if said packet's destination address does not match said local address in said look-up table; and

remultiplexing said packets for re-insertion into an ongoing wavelength channel.

3.   The method according to claim 1, further comprising the step of directing, by a switch controller circuit, said packets to a local customer via a wavelength packet cross-connect.

4.   The method according to claim 1, further comprising the step of directing, by a switch controller circuit, said packets to a customer's premises via a distribution node.

5.   The method according to claim 4, further comprising the steps of:

electrically detecting optically transported data generated at said customer's premises;

packetizing said data generated at said customer's premises;

reading a packet header contained within said packetized data;

assigning said packetized data to a wavelength in such a manner so as to avoid a "crash" with a wavelength in use by other system components;

multiplexing other locally generated packets with said packetized data;

remultiplexing said multiplexed packets into an ongoing wavelength channel; and

directing said ongoing wavelength channel downstream to a further primary distribution/aggregation node.

6.   The method according to claim 4, further comprising the steps of:

electrically detecting optically transported data generated at said customer's premises;

packetizing said data generated at said customer's premises;

reading a packet header contained within said packetized data;

assigning said packetized data to a wavelength in such a manner so as to avoid a "crash" with a wavelength in use by other system components;

directing said assigned wavelength containing said packetized data to another customer via a wavelength packet cross-connect.

7. The method according to claim 4, wherein said packets are directed to said customer's premises via one of fiber, free space optical communications and millimeter wave radio.

8. The method according to claim 4, further comprising the step of sequential time-slot switching said packets.

9. The method according to claim 1, wherein said switching step is controlled by a separate radio control layer.

10. The method according to claim 4,

detecting a data rate and a wavelength generated at said customer's premises;

optionally converting said wavelength to another wavelength in such a manner so as to avoid a "crash" with a wavelength in use by other system components; and

directing said optionally converted wavelength upstream to a further primary distribution/aggregation node.

11. The method according to claim 10, further comprising the step of inserting said optionally converted wavelength into an upstream channel.

12. A method for providing local metropolitan switching and routing and broadband local access distribution comprising the steps of:

interfacing with a primary fiber metropolitan ring and a local customer primary distribution/aggregation node via transport branches of a mesh architecture;

routing specific wavelengths and newly assigned wavelengths to and from a customer's premises; and

handling customer specific wavelength and packet routing via one of fiber, millimeter wave radio and free space optical communications.

13.   A method for facilitating wavelength-specific and packet-switched routing comprising the steps of:

demultiplexing wavelengths propagating on a primary metropolitan fiber ring;

determining a destination address for said wavelength;

accessing a look-up table;

determining if said destination address matches a local address contained in said look-up table; and

switching said wavelength based on a result of said determining step.

14.   A method for distributing specific wavelengths to a customer's premises comprising the steps of:

propagating wavelengths on a primary metropolitan fiber ring;

determining a primary distribution/aggregation node where said customer's premises is located;

directing said wavelengths to said primary distribution/aggregation node;

further directing said wavelengths to a secondary aggregation node;

further directing said wavelengths to a tertiary aggregation node; and

further directing said wavelengths to said customer's premises.

15.   The method according to claim 14, wherein said further directing to a secondary aggregation node is via one of fiber and free space optical communications.

16.   The method according to claim 14, wherein said further directing to a tertiary aggregation node is via one of fiber, millimeter wave radio and free space optical communications.

17.   A method for distributing packet-switched data carried in wavelengths to a customer' s premises comprising the steps of:

propagating said packet-switched data carried on wavelengths on a primary metropolitan fiber ring;

determining a primary distribution/aggregation node where said customer's premises is located;

directing said packet-switched data to said primary distribution/aggregation node;

further directing said packet-switched data to a secondary aggregation node;

further directing said packet-switched data to a tertiary aggregation node; and

further directing said packet-switched data to said customer's premises.

18.   The method according to claim 17, wherein said further directing to a secondary aggregation node is via one of fiber and free space optical communications.

19.   The method according to claim 17, wherein said further directing to a tertiary aggregation node is via one of fiber, millimeter wave radio and free space optical communications.

20.   A method for distributing packet-switched data carried in wavelengths and specific wavelengths to a customer's premises comprising the steps of:

propagating said packet-switched data carried on wavelengths and specific wavelengths on a primary metropolitan fiber ring;

determining a primary distribution/aggregation node where said customer's premises is located;

directing said packet-switched data and said specific wavelengths to said primary distribution/aggregation node;

further directing said packet-switched data and said specific wavelengths to a secondary aggregation node;

further directing said packet-switched data and said specific wavelengths to a tertiary aggregation node; and

further directing said packet-switched data and said specific wavelengths to said customer's premises.

21.   A method of aggregating specific wavelengths for propagation on a primary metropolitan fiber ring comprising the steps of:

generating wavelengths at a customer's premises;

aggregating said wavelengths into a tertiary aggregation node;

directing said aggregated wavelengths to a secondary aggregation node;

further aggregating said wavelengths received from said tertiary aggregation node

into a bundle of wavelengths;

directing said bundle of wavelengths to a primary distribution/aggregation node;

and

further directing said bundle of wavelengths onto said primary metropolitan fiber

ring.

22.   The method according to claim 21, wherein said directing to a secondary

aggregation node is via one of fiber and free space optical communications.

23.   The method according to claim 21, wherein said directing to a tertiary

aggregation node is via one of fiber, millimeter wave radio and free space optical

communications.

24.   A method of aggregating packet-switched data for propagation on a

primary metropolitan fiber ring comprising the steps of:

generating packet-switched data at a customer's premises;

aggregating said packet-switched data into a tertiary aggregation node;

directing said aggregated packet-switched data to a secondary aggregation node;

further aggregating said packet-switched data received from said tertiary

aggregation node;

directing said packet-switched data to a primary distribution/aggregation node;

multiplexing said packet-switched data onto wavelengths assigned so as not to "crash" with other wavelengths in use by other system components;

remultiplexing said assigned wavelengths into a bundle of wavelengths; and

further directing said bundle of wavelengths onto said primary metropolitan fiber ring.

25.   The method according to claim 24, wherein said directing to a secondary aggregation node is via one of fiber and free space optical communications.

26.   The method according to claim 24, wherein said directing to a tertiary aggregation node is via one of fiber, millimeter wave radio and free space optical communications.